. R E P O R T R E S U M E S

ED 015 839 RE 001 041

FIELD TEST OF AN ACADEMICALLY ORIENTED PRESCHOOL CURRICULUM.

BY- REIDFORD, PHILIP BERZONSKY, MICHAEL

PUB DATE 18 FEB 67

EDRS PRICE MF-$0.25 HC-$0.44 9P.

DESCRIPTORS- *PRESCHOOL EDUCATION, PRESCHOOL CURRICULUM, *EARLY EXPERIENCE, *CULTURALLY DISADVANTAGED, *EARLY READING, *CURRICULUM RESEARCH, PRESCHOOL PROGRAMS, PRESCHOOL LEARNING, PREREADING EXPERIENCE, DISADVANTAGED YOUTH, ONTARIO INSTITUTE FOR STUDIES IN EDUCATION, UNIVERSITY OF TORONTO, PENNSYLVANIA DEPARTMENT OF PUBLIC INSTRUCTION,

TO SUPPORT THE PREMISE THAT EARLY EDUCATION REDUCES ENVIRONMENTAL DEPRIVATION AND TO SUBSTANTIATE PROPOSALS ADVANCED BY BEREITER AND ENGLEMANN IN "TEACHING DISADVANTAGED CHILDREN IN PRESCHOOL," AN EXPERIMENT WAS CONDUCTED IN A HEADSTART SETTING. TWO CLASSES, EACH OF 24 CHILDREN RANGING IN AGE FROM 3-8 TO 5-7, ATTENDED PRESCHOOL CLASSES FOR TWO AND ONE-HALF HOURS DAILY AT THE MCKINLEY SCHOOL IN YORK, PENNSYLVANIA. INSTRUCTIONAL CONTENT, TEACHING STRATEGIES, AND PRESCHOOL MANAGEMENT PROCEDURES FOLLOWED THE PROGRAM WHICH BEREITER AND ENGLEMANN OUTLINED IN THEIR BOOK. THE CHILDREN WERE ALSO INSTRUCTED IN LANGUAGE, READING, AND ARITHMETIC FOR AN HOUR EACH DAY FOR 6 MONTHS. THE STANFORD-BINET INTELLIGENCE TEST WAS GIVEN DURING A 2-WEEK POST-TEST PERIOD. A YEAR LATER TWO SUBTESTS OF THE ILLINOIS TEST OF PSYCHOLINGUISTIC ABILITIES, AUDITORY VOCAL AUTOMATIC AND AUDITORY VOCAL ASSOCIATION, WERE GIVEN TO 38 OF THE 48 CHILDREN WHO THEN HAD 8 MONTHS OF PRESCHOOL EXPERIENCE, 2 MONTHS OF SUMMER EXPERIENCE, AND 1 MONTH OF KINDERGARTEN EXPERIENCE. RESULTS INDICATED THAT LONG-TERM EXPOSURE TO THE BEREITER-ENGLEMANN PRESCHOOL CURRICULUM INCREASED INTELLIGENCE QUOTIENT LEVELS AND STIMULATED DEVELOPMENT IN REASONING ABILITY, LANGUAGE FACILITY, AND UNDERSTANDING. THIS PAPER WAS PRESENTED AT THE AMERICAN EDUCATIONAL RESEARCH ASSOCIATION CONFERENCE (NEW YORK, FEBRUARY 18, 1967). (NS)

ED015839

Presented at AERA Convention
New York City
18 February, 1967

*Field Test of an Academically Oriented Preschool Curriculum

Philip Reidford
Ontario Institute for Studies in Education
University of Toronto

Michael Berzonsky
Pennsylvania Department of
Public Instruction

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

ED001 041

* The authors wish to acknowledge the support and cooperation of the U.S. Office of Economic Opportunity (Project Headstart), the York, Pennsylvania City School Administration, and the Pennsylvania Department of Public Instruction.

Since the beginning of Project Headstart in 1965, numerous experiments have been carried out with the objective of designing a curriculum which could remedy the environmental deficiencies in disadvantaged preschool children (Alpern, 1966; Bereiter & Engelmann, 1966; Gray & Klaus, 1965; Hartman, 1966; Weikhart, 1964).

The most highly structured of these curricula is the Bereiter-Engelmann (1966) program which teaches language, reading and arithmetic to four-year-old disadvantaged children. According to the authors, after three months of instruction fifteen disadvantaged preschoolers showed gain scores of four months, three months, and 15 months on three subtests of the Illinois Test of Psycholinguistic Abilities, the Auditory Vocal Automatic, Auditory Vocal Association, and Vocal Encoding, respectively. Three months later Bereiter reported additional gains on the ITPA subtests of nine, five and eight months, respectively. Also reported was a mean IQ gain of 6.7 on the Stanford-Binet after six months of instruction.

The present experiment seeks to test the findings of Bereiter and Englemann in a Headstart setting. The importance of such a test is twofold. First, Headstart is based on the empirically unsubstantiated premise that early education has the force to eliminate or greatly reduce environmental deprivation; this study seeks to provide some of the needed empirical evidence for the Headstart premise. Second, Bereiter and Engelmann have recently published a book, Teaching Disadvantaged Children in the Preschool, in which they explain in detail contents and teaching strategies with such logic and force that the wary practitioner needs substantiating data from outside sources.

Two classes, each of 24 children ranging in age from 3-8 to 5-7, selected according to Project Headstart criteria, attended preschool classes for 2½ hours, one group in the morning and one in the afternoon, five days a week.

at the McKinley School in York, Pennsylvania. These Headstart children were instructed in the Bereiter and Engelmann language, arithmetic, and reading curricula for a period of approximately six months. Each class was broken down into four ability groups according to informal performance ratings by the teachers. Each of these eight groups received one hour of instruction in a 2½ hour day -- each content area consuming 20 minutes. The four teachers, two per class, received one half-day of training per week for three months in the Bereiter-Engelmann curriculum.

Because of teacher training difficulties (all teachers could not be trained in all subject matter areas at the same time), it was decided to train all the teachers in language first, then reading, and finally arithmetic. The content areas were also presented to the children in this order, hence 20 minutes of daily classroom instruction in language began on October 1, 1965, in reading on December 1, 1965, and in arithmetic on January 3, 1966. The assumption is, therefore, that pre-posttest differences on the measures used are primarily due to effects of eight months of language training, seven months of reading training, and six months of arithmetic training. The instructional content, the teaching strategies, and the preschool management procedures -- with the sole exception of the reading program -- closely follow the Bereiter-Engelmann preschool program as outlined in their book, Teaching Disadvantaged Children in the Preschool, 1966. The reading curriculum was taken from an earlier work by Bereiter, Englemann, Osborn and Reidford (1966).

Since this preschool program was able to afford only two teachers per class of 24 children, the teaching load was shared between the two teachers. As each of the four groups was taught for one hour per day, 20 minutes in each subject area, an alternating schedule was devised so that a teacher taught two

subjects for a total teaching time of two hours per day. An aide was on hand to take care of children who were not being instructed. This strategy was employed for two months, until the end of February, at which time it was decided that two hours per day of intensive teaching was too much of a load. Therefore, all four teachers got together and worked out a team teaching system which lightened their individual teaching loads and ensured that the children were not getting a worn-out instructress. Under the revised teaching schedule, all four teachers taught morning and afternoon. One teacher instructed three reading groups, another two arithmetic groups, another two language groups, and the fourth one language and one arithmetic group. This schedule varied, according to load and subject taught,from morning to afternoon and from day to day on a rotating basis which ensured that each teacher was instructing the same number of classes per week. As before, however, groups of approximately six children received three instructional sessions per day in language, reading and arithmetic.

Testing

All of the children were given Form L-M of the Stanford-Binet Intelligence Test from two to ten weeks after the program began. This extended testing schedule was due to the lack of availability of qualified Binet testers, which forced us to use one part-time tester for all of the children. This delayed testing, as we see it, would serve only to diminish the possibility of gains on posttesting, for some of the children had already made ten weeks of progress in the program.*

A posttest Stanford-Binet was administered to all of the children 23-25 weeks after week 10 of the pretesting sessions. In other words, the posttesting period for all 48 subjects was only two weeks. During the posttest the

* If we were to obtain the same gains as Bereiter and Engelmann this diminuation could conceivably be as much as 3-5 points in IQ.

same examiner was used full-time and an attempt was made to administer the test in the same sequence order as the pretest. One year after the program began, two subtests of the ITPA Auditory Vocal Automatic and Auditory Vocal Association, were administered to 38 of the 48 children. At this time, all of the subjects had not only had the eight-month preschool experience but also had had a two-month summer program based on the Bereiter-Engelmann method, and a one-month kindergarten experience. These two subtests were chosen because Bereiter and Engelmann (1966) found that disadvantaged children with a median mental age of 4-6 scored at about a three-year level on these tests. Additional evidence of below average performance by disadvantaged children on these subtests of the ITPA are reported by Gray and Klaus (1965) and Hartman (1966). Informal descriptive data in the form of observations by teachers, parents and the writers were also collected.

Results and Discussion

Generally, results similar to but less dramatic than those reported by Bereiter and Engelmann (1966) were obtained. The children showed a mean gain of 6.4 points on the Stanford-Binet, which brought them from 95.7 to 102.1. A sign test which was run on the IQ scores indicated that this gain was significant at the .01 level. That there was a mean IQ gain of 6.4 is hardly astounding when compared to gains reported in other preschool studies (Gray & Klaus, 1965; Hartman, 1966; and Kirk, 1958); however, what is interesting is seeing where the gains occurred. The least-squares fit indicated that there is a non-linear relationship between pre-posttest scores in that the pretest-posttest gain increases with increased pretest scores; in other words, the higher the initial IQ, the greater the gain.

As one would expect, the obverse finding (that the lower the initial IQ the greater the gain), is generally reported in most studies with preschool disadvantaged children; Bereiter and Engelmann's 1966 study is an exception. The differential effect of treatment in the present study would seem to indicate that although the children were taught in groups that were formed on the basis of ability, the teachers were better able to gear their instruction to comparably brighter children. And, in fact, a common and recurring comment made by the teachers was that it was so much easier to teach the higher level groups than the lower level groups.

Administration of the auditory-vocal-automatic and auditory-vocal-association subtests of the ITPA revealed that the children were functioning at realistic levels for their ages. At a mean chronological age of 5-3, the children obtained a mean score of 5-2 on the auditory-vocal-automatic and 5-3 on the auditory-vocal-association tests. This data compares favorably with Bereiter's Progress Report on an Academically Oriented Preschool for Culturally Deprived Children, 1965, which indicated that children with a mean chronological age of 5-1 drawn from a population similar to ours after six months of treatment obtained scores of 4-9 on the auditory-vocal-automatic and 4-7 on the auditory-vocal-association. Our results are heartening for two reasons. First, the auditory-vocal-automatic is a test of syntax usage and understanding, and the auditory-vocal-association is a verbal analogy or reasoning test. Although we did not give pretests on these measures, we have reviewed pretest results of several studies which drew their sample from a population which approximated ours, and our test results indicate that we made considerable progress in developing these two important skills. Second, data

from other studies indicate that even with increases in IQ levels very little increase is found in these two language subtests. For example, in the study by Reidford and Berzonsky (1967) the control group had a mean chronological age of 5-2 and mean scores of 3-7 and 4-0 on the auditory-vocal-automatic and auditory-vocal-association, respectively. The experimental group with a chronological age of 5-1 had means scores on these same tests of 4-0 and 4-4 respectively. Other similar results are to be found in Gray and Klaus' 1965 study and Hartman's 1966 study.

We believe, therefore, that what is important in our study are the scores obtained on the two measures of the ITPA not the scores obtained on the Stanford-Binet.

A logical conclusion is that all studies which obtain an IQ increase have some effect on the children; however, the important issue seems to be where the effect is taking place. For example, the profile of the Gray and Klaus 1965 study indicates that the children were advanced evenly and proportionately from pretreatment levels to posttreatment levels on the nine subtests. Initially they were below their chronological ages in auditory-vocal-association, auditory-vocal-automatic, auditory decoding, visual-motor sequencing, and motor encoding, and after three years they continued to be considerably below comparable age level norms in these skills. Therefore, contrary to our findings, advances in the Gray and Klaus study did not seem to be made where they were needed most.

Conclusions

In summary, our results indicate that a long-term exposure to the

Bereiter-Engelmann preschool curriculum not only raises IQ levels, but also, and more important, stimulates development in reasoning ability, and in grammatical usage and in understanding. It is evident from our results and from the results obtained by Bereiter and Engelmann (1966) that an academically oriented curriculum can serve as an effective instrument in reversing some of the intellectual deficits of the culturally disadvantaged. However, the Reidford and Berzonsky (1967) and Wolff and Stein (1966) studies also indicate that such deficiencies are not sensitive to short-term educational remedies. Therefore, until contrary evidence is gathered on the effectiveness of short-term programs we recommend that short-term discontinuous programs for preschool disadvantaged children should be replaced exclusively by long-term programs which extend their methodologies up through the early elementary grades.

References

Alpern, G.D. The failure of a nursery school enrichment program for culturally disadvantaged children. Paper read at Regional Meeting of AAPCC, Cincinatti, Ohio, 1966.

Bereiter, C. Progress report on an academically oriented preschool for culturally deprived children. Urbana, Illinois, 1965, mimeo.

Bereiter, C., Engelmann, S., Osborn, Jean and Reidford, P. "An academically oriented preschool for culturally deprived children", Preschool Education Today in Fred Hechinger (Ed.), New York: Doubleday and Company, Inc., 1966, Pp. 105-135.

Bereiter, C., and Engelmann, S. Teaching disadvantaged children in the preschool. New York: Prentice-Hall, 1966.

Gray, Susan, and Klaus, R.A. An experimental preschool program for culturally deprived children, Child Development, 1965, 36, 887-898.

Hartman, A.S. (1964-1965), Annual progress report to the Ford Foundation, preschool and primary education project, Harrisburg, Pennsylvania, Department of Public Instruction, 1966.

Reidford, P., and Berzonsky, M. An evaluation of an eight week Headstart program. Reported New York, AERA Convention, Feb. 1967.

Weikhart, D.P. Perry preschool project progress report. Ypsilanti, Michigan, June 1964, mimeo.

Wolff, M. and Stein, Annie. Six months later, a comparison of children who had Headstart, summer, 1965, with their classmates in kindergarten. New York City, August, 1966, mimeo.